

CLAIMS

1. A downhole tool for location on a work string, the tool including an assembly operable in a well bore via the work string, wherein the assembly is disengagable from the work string at a selected location in the well bore, and wherein the tool further includes retrieval means to pick up and engage the assembly on retrieval of the work string from the well bore.
2. A downhole tool as claimed in Claim 1 wherein the tool comprises a substantially tubular body upon which is located the assembly.
3. A downhole tool as claimed in Claim 1 or Claim 2 wherein the assembly is a sleeve positioned on an outer surface of the tool.
4. A downhole tool as claimed in Claim 3 wherein the assembly is a milling sleeve.
5. A downhole tool as claimed in any preceding Claim wherein the assembly is operated from the work string by a hex-drive system.
6. A downhole tool as claimed in Claim 5 wherein the body includes a portion of an outer surface having a plurality of longitudinally extending planar sections arranged around a circumference of the body, and the assembly includes an inner surface, a portion of which has a plurality of longitudinally extending sections matching those of the body, such that when

the body is rotated by virtue of the work string being rotated, the assembly is rotated also.

7. A downhole tool as claimed in any preceding Claim wherein the assembly includes a shoulder on an inner surface thereof, the shoulder providing a ledge upon which a portion of the body engages when the tool is retrieved from the well bore.
8. A downhole tool as claimed in the portion of the body is that portion provided as a ledge by the plurality of longitudinally extending planar sections.
9. A downhole tool as claimed in any preceding Claim wherein the assembly is detachably coupled to the body.
10. A downhole tool as claimed in Claim 9 wherein the detachable coupling is by one or more shear pins.
11. A downhole tool as claimed in Claim 10 wherein the assembly includes an outer shoulder, the outer shoulder contacting a formation in the well bore to cause the shear pins to shear and decouple the assembly from the body thereby disengaging the assembly from the work string.
12. A downhole tool as claimed in Claim 10 or Claim 11 wherein the shear pins include a constricted portion positioned at a plane between the assembly and the body.
13. A downhole tool as claimed in any one of Claims 10 to 12 wherein the body and the assembly include means

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for retaining sheared parts of the sheared pins to prevent them from dispersing into the well bore.

14. A downhole tool as claimed in Claim 13 wherein the means for retaining sheared parts of the shear pins is by one or more pockets located in the body and the assembly.

15. A downhole tool as claimed in any preceding Claim wherein the tool includes a safety mechanism to prevent premature decoupling of the assembly from the body prior to the assembly reaching a selected location in the well bore.

16. A downhole tool as claimed in Claim 15 wherein the safety mechanism comprises a button mounted in a first position to lock the assembly to the tool body, the button having a face engageable with the selected formation, whereupon engagement with a selected formation at the selected location moves the button from the first position to a second position, disengaging the lock and wherein the selected formation maintains the button in the second position while the selected formation contacts the assembly thereby disengaging the assembly from the work string.

17. A method of running a work string in a well bore to operate more than one tool on a single trip, the method comprising the steps:

a) locating a first tool, including an assembly, operable in a well bore on the work string, the work string

1 including one or more further tools located below the
2 assembly;

3 b) running the work string into the well bore until the
4 assembly reaches a selected location and at this
5 location operating the first tool via the work string;

6 c) disengaging the assembly from the work string at the
7 selected location;

8 d) passing the work string beyond the assembly until the
9 one or more further tools have reached desired

10 locations and performed their functions;

11 e) removing the work string from the well bore; and

12 f) picking up the assembly on the work string as the work
13 string is retrieved.

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15 18. A method as claimed in Claim 17 wherein the assembly
16 is a milling assembly for milling and dressing a
17 polished bore receptacle in the well bore.

18 19. A method as claimed in Claim 17 or Claim 18 wherein
19 the assembly is disengaged from the work string by
20 contacting the assembly with a formation in the well
21 bore and setting down weight on the work string.

22 20. A method as claimed in any one of Claims 17 to 19
23 wherein the assembly is picked up by the work string
24 by contacting a ledge on the work string with a
25 shoulder on the assembly.

26 21. A method of milling a polished bore receptacle in a
27 well bore on the same trip as other functions are
28 performed in the well bore, the method comprising the
29 steps:

30 a) mounting a milling assembly in the form of a sleeve
31 including one or more milling elements onto a body
32 in a work string;

- 1 b) connecting a drive between the assembly and the body
2 and coupling the assembly to the body;
3 c) running the work string in the well bore until the
4 milling assembly reaches the polished bore
5 receptacle;
6 d) rotating the work string and thereby through the
7 drive rotating the milling assembly to mill and
8 dress the polished bore receptacle;
9 e) resting a portion of the assembly on the top of the
10 polished bore receptacle and setting down weight on
11 the work string to disengage the coupling between
12 the assembly and the body;
13 f) running the work string further into the well bore
14 and operating one or more further tools from the
15 work string;
16 g) retrieving the work string from the well bore and
17 engaging a portion of the body to a shoulder on the
18 assembly so that the assembly is picked up by the
19 work string and retrieved from the well bore.